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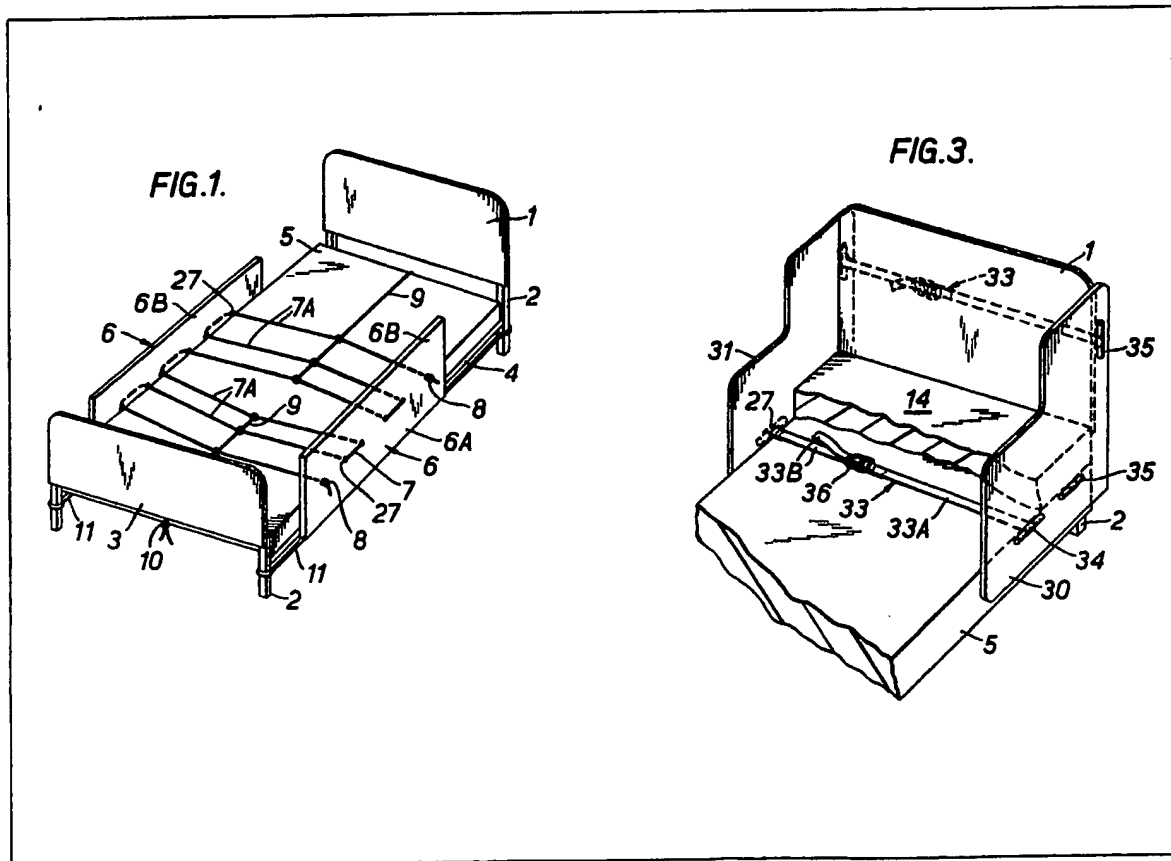
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## (54) Support boards for a bed

(57) Side-support boards (6, 30) are suspended one on each side of a bed by flexible ties (7a, 33) extending between the boards, over the bed base (5) and beneath the mattress (14), the boards abutting the base and projecting thereabove. The ties are adjustable in length and can be pulled taut to maintain the boards substantially vertical. The boards may be resiliently padded to retain bedclothes on the bed. The side-support boards as shown prevent an occupant from

falling out of the bed. Alternatively, the boards may provide a footboard and a headboard. The two side boards may be used to fasten two single beds together to form a double bed.



The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.

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FIG. 1.

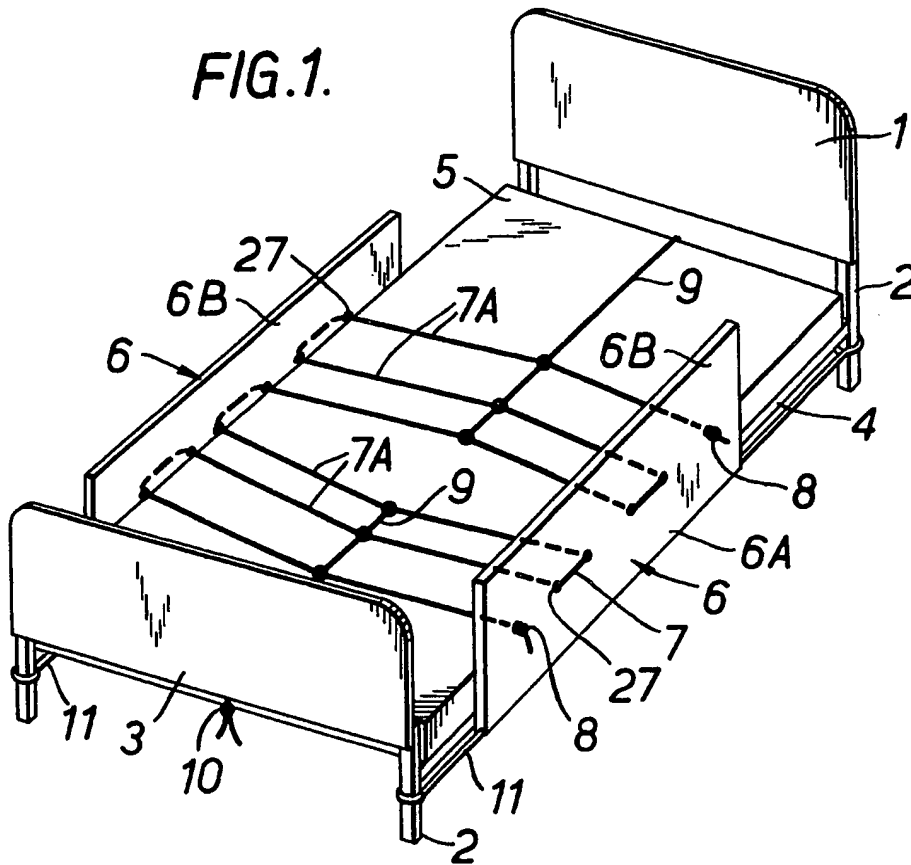
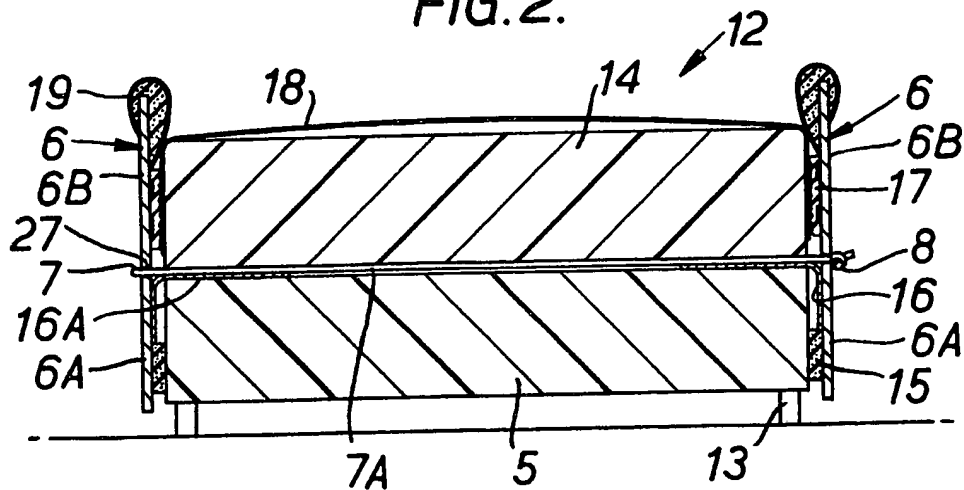


FIG. 2.





## SPECIFICATION

### Supports boards for a bed

- 5 The present invention relates to boards for use with a bed, and particularly to boards for location on either side of a bed, whether of a frame or divan-type or any couch having a mattress superimposed on a base, or to head and foot boards for a divan bed or couch.

- 10 Side boards are normally provided only for bunks in moving vehicles such as ships but are useful not only to prevent the occupant from falling out of the bunk due to the motion of the vehicle but also to retain bedclothes on the bunk and to allow the occupant full use of the entire width of the bunk, which is usually rather narrow. Hospitals and nursing homes also make use of side boards and rails, particularly for the elderly or handicapped but, as with the side boards of bunks, these are normally formed as part of the fixed structure of the bed or require the bed structure to be especially modified to receive them.

- 25 It will be appreciated that such bunks and beds are expensive to construct or to modify to receive side boards or rails and whereas they are provided, out of necessity, in the situations described above, it is not economically possible to provide them in most private households. There are, however, times when they would be particularly useful, such as during illness or when an infant is first transferred from a cot to a bed, that is, at the time of greatest danger of the child falling out of bed. Thus an object of the present invention is to provide a pair of boards which can be attached to a bed without modification of the structure of the bed itself, which are readily removable when not required, and which can be manufactured relatively cheaply so that their selling price can be brought within the range of the ordinary household budget.

- 45 A further problem encountered, on occasion, in the home is that of converting two single beds into a double bed. At present this is achieved by means of specially-adapted, expensive mattresses which can be fastened together by a sliding-clasp fastener, or simply by pushing two beds together and making them up as one; this latter method is usually unsuccessful since the beds tend to part in the night, allowing a draft between them. A further object of the invention is, therefore, to provide effective but relatively inexpensive means for fastening two beds together.

- 60 According to the present invention there is provided a pair of boards interconnected by a plurality of flexible ties for extending over the base of the bed beneath a mattress to suspend the boards on opposite sides of the bed with lower portions of the boards abutting opposite faces of the base so that the boards are substantially vertical with upper portions projecting above the base. It will be appreci-

ated that the boards may equally easily be positioned at the ends of a divan bed to provide a foot-board and a headboard

- 70 The boards of the present invention may be attached to a bed simply by placing the ties over the base and superimposing the mattress. Although the boards may comprise a foot and headboard for a divan bed, the invention is particularly concerned with providing a pair of side-support boards for any type of bed having a base and a mattress. The boards may thus be used to help retain bed clothes on a bed, to stop the occupant from falling out of bed or to provide support for an occupant during the day-time, but may also be used to fasten two single beds together to form a double bed.

- 85 The ties interconnecting the boards are preferably of cord or webbing but may, for example, be of plastics material or metal wire or chain but, if formed from any material which could chafe the base or mattress, are preferably sheathed in plastics or other suitable material.

- 90 The ties may be of a fixed length such that the boards which they interconnect may be used with beds of a particular size; such ties may, for example, be stapled to the boards or may be releasably attached to the boards by suitable clips or, preferably, in the case of cords, or webbing, passed through apertures in the boards and either knotted at either end or fastened to anchorages of greater size than the apertures.

- 100 Alternatively the ties may be of variable length such that any one pair of boards may be used with a variety of beds of different sizes, and to fasten two beds together. Variable-length ties may be formed in two portions, one portion being attached to each board. The portions may simply be tied together in use or may be provided with suitable buckles.

- 110 The ties may extend diagonally across a bed, in use, but preferably extend substantially perpendicular to the boards which they interconnect. The ties may be slightly longer than the width of a bed such that the points of suspension of the board are a few centimetres below the upper surface of the base but preferably the ties are tensioned such that they extend almost exactly the width of the bed; this may be achieved by shortening each tie once the boards have been located in their positions of use or by tensioning them in a direction perpendicular to their length by additional tensioning means.

- 125 The boards may be of any suitable, rigid material such as wood, certain plastics materials or chipboard. In the case of chipboard or any other material which might chafe the base or mattress, each board preferably has a smooth plastics coating or is provided with a textile cover. Boards intended for use as foot and headboards, particularly, may be provided

with any desired decorative finish.

Boards intended for use as side-support boards are preferably elongate and extend a substantial length of the bed, in use, although they need not extend the full length of the bed. Such boards may project upwardly to the level of the top of the mattress if they are required simply to help retain blankets in position on a bed but they preferably project to a height of the order of 10 to 20 cms above the upper surface of the mattress to allow the occupant the use of the full width of the bed in comfort and to prevent the occupant from falling out of bed. The upper edges of side-support boards may be padded, preferably with a resilient material such as foam rubber, both for comfort and to help retain the bedclothes in position. The part of the surface of each board which abuts the mattress may also be formed so as to grip the bedclothes: pads of rubber or other resilient material, preferably with a rough, but non-abrasive, surface may, for example, be provided.

In an alternative embodiment of the invention, the side support boards are intended for use at the head of a bed to support an occupant wishing to sit up in bed. Such boards may extend only a short distance longitudinally of the bed but preferably project to a height of from 60 cm to a metre above the top of the mattress and may be interconnected by further bracing ties which extend between their rear edges, preferably behind the headboard.

Several embodiments of the present invention will now be more particularly described, by way of example, with reference to the accompanying, purely-diagrammatic drawings, in which:

*Figure 1* is a perspective view of a frame bed provided with side support boards according to one embodiment of the invention;

*Figure 2* is a cross sectional view of a divan bed provided with side support boards according to a second embodiment of the invention; and

*Figure 3* is a perspective view of a divan bed provided with side-support boards according to a third embodiment of the invention.

Referring to Fig. 1 of the drawings, a double bed is shown having a supporting framework comprising a headboard 1 incorporating two rear legs 2 of the bed, a foot board 3 incorporating two front legs 2 of the bed, and two stretchers 4 which extend between, and are attached to, the foot and headboards. A base 5 is located on the stretchers 4 and would normally support a mattress but this is not shown in Fig. 1 for clarity of illustration.

In addition to the head and foot boards 1, 3 respectively, the bed of Fig. 1 is provided with two elongate, generally-rectangular side-support boards 6. The boards 6 are interconnected at points 27 spaced apart along their lengths by six lengths of cord 7A which

extend across the upper surface of the base 5 and suspend the boards 6 one on either side of the base 5; lower portions 6A of the boards 6, below the suspension points 27, abut the base 5 to maintain the boards in substantially vertical planes, while upper portions 6B of the boards project above the base 5.

As is seen in the drawing, in this embodiment, the boards 6 are shorter than the full length of the bed and are spaced from the headboard 1 to allow easy access to the bed, but they may extend the full length of the bed if preferred. The boards 6 are also of such a width that their portions 6B project approximately 10 cm above the upper surface of the mattress when it is located on the bed.

In this embodiment a very simple form of the invention is shown in which the boards 6 are made from chipboard, which combines characteristics of strength and lightness, and is laminated with a surface layer of plastics material to provide a smooth finish which will not damage the fabric covering of the base 5 or of the mattress. The plastics coating is also washable.

The lengths of cord 7A interconnecting the boards 6 are, in fact, portions of a continuous cord 7 which is passed through opposing apertures, comprising the suspension points 27, in the boards 6, each board 6 having a row of longitudinally spaced apertures and the cord 7 being passed to and fro between the boards as shown in the drawing. The two free ends of the cord 7 are knotted against an outwardly facing surface of one of the boards, as shown at 8.

The cord 7 may be pulled taut to shorten the distance between the boards to maintain them tight against the base 5 but, in this embodiment, additional tensioning cords 9 are provided each of which is attached at spaced apart points along its length to the centres of three adjacent cord lengths 7A. The two cords 9 thus extend longitudinally of the bed, are passed each over a respective end of the base 5, are brought together beneath the bed and pulled tight to draw the cord lengths 7A out of their straight lines across the base 5 and draw the boards 6 together; the two cords 9 are tied together, as shown at 10, to maintain their tension.

In addition to the tensioning cords 9, additional reinforcing cords 11 are provided, one at each lower corner of the boards 6, the cords 11 being tied to respective adjacent bed legs 2. Rigid reinforcements may be provided instead of the cords 11 for use with frame beds but no such reinforcements are normally provided for boards 6 for use with divan beds.

Referring to Fig. 2 of the drawings side boards 6 according to a second embodiment of the invention are shown attached to a divan bed generally indicated 12 having a base 5 provided with feet 13, and a mattress 14. The side boards 6 are attached to the bed 12 by

means of a cord 7 formed into six sections 7A extending between the boards 6 and sandwiched between the base 5 and mattress 14, as in the previous embodiment. In this embodiment, however, the boards 6 are each provided on their mutually opposing surfaces of their lower parts 6A with pads 15 of foam rubber or other, non-abrasive padding material, which extend the full length of the boards 6 adjacent their lower edges and which abut the base 5 to take up any slight movement of the boards, which may arise in use, and prevent chaffing of the base covering material.

In addition, a length of canvas or other material 16 is attached to each board portion 6A above the padding 15, the material 16 having a free flap portion 16A which can be located on the base 5 beneath the cord lengths 7A to protect the base from chaffing by the cord 7.

The boards 6 are each further provided on the mutually opposing surfaces of their upper portions 6B, above the apertures 27 for the cord 7, with elongate pads of rubber 17 with opposing ridged surfaces. These rubber pads 17 serve to retain blankets 18 on the bed without the need for the blankets to be tucked underneath the mattress. The blankets 18 may thus be of a smaller size than would normally be required for the bed 12.

A final feature of each board 6 of this embodiment is a layer of foam rubber padding 19 provided along the upper edge thereof which projects above the level of the mattress 14. This padding 19 protects an occupant of the bed 12 from hurting himself against the boards 6 and also, together with the rubber 17, helps to retain the blankets 18 on the bed 12. The foam rubber 19 is provided with a decorative fabric cover. The upstanding edges of the boards 6 would also, of course help to retain a duvet on the bed, if used instead of the blankets.

Although the side-support boards 6 described above project only a few centimetres above the mattress 14, which is sufficient for most adults, they may project considerably further above the mattress, particularly for use with infants who have just been transferred from a cot. It will also be appreciated that, since the boards 6 have portions 6A and 6B below and above the suspension points respectively, in use, they can be formed so as to be usable with either portion uppermost: thus high and low side-support boards may be combined in a single pair of boards.

The side-support boards 6 have been described in use with only one bed but they could usefully be attached to two beds, placed side by side, for example to combine two single beds into a double bed, the cord lengths 7A being tensioned to draw the beds tightly together.

A further use envisaged for the boards 6 is with beds located against a wall: the board 6

adjacent the wall would prevent the occupant from coming into direct contact with the wall, could serve as a back rest for use of the bed during the daytime and would simplify the process of making the bed since the blankets need be tucked only between the mattress and the board 6, obviating the need to lift the mattress to tuck them underneath. The side board located at the side of the bed remote from the wall need not extend above the level of the mattress and may be padded and decoratively finished to make the bed more suitable as a daytime couch.

Referring to Fig. 3 of the drawings, a further embodiment of the invention is shown. In this embodiment, side-support boards 30 are adapted to provide lateral support, particularly for an invalid sitting up in bed and are fully padded on their opposing, upstanding surfaces.

The boards 30 are located at the head of the bed and project to a height of 60 cm to a metre above the mattress adjacent the bed head 1 but extend only a short length, approximately 60 cm, down the length of the bed and are formed with lower portions 31, at their ends remote from the bed head, which may be used as armrests.

Since a considerably greater proportion of the boards 30 project above the base 5 than in previous embodiments, these boards are more liable to lean outwardly under their own weight than the boards described above. Hence an additional bracing tie 33 is provided to interconnect the rear edge portions of the boards 30, the tie 33 extending behind the headboard 1.

An alternative embodiment of the tie used to interconnect the side-support boards of the invention is shown in Fig. 3, but may equally well be used with the embodiments of Figs. 1 and 2. As shown in Fig. 3 the single cord 7 described above is replaced by individual webbing ties 33, which extend between corresponding opposite anchorage points 27 of the boards 30. The anchorage points 27 are formed as elongate slots in the boards 30, rather than the round apertures of the previous embodiments, to accommodate the flat webbing which passes through them.

Each webbing tie 33, rather than being knotted to anchor it to the boards 30, is formed at each end into a loop 34 which is retained by stitching, or rivetting. An anchoring rod 35 is passed through each loop 34 and abuts the outer surface of the respective board 30.

The webbing ties may be of fixed length but are preferably formed in two portions 33A, and 33B, as shown, one portion being anchored to each board. One portion 33A of each tie 33 is provided with a buckle 36 of known type, comprising two metal rings, through which the free end of the other portion 33B is passed and turned back on

itself. The free end of each portion 33B of the ties 30 can be pulled to shorten the ties so that they extend tautly between the boards 30 to retain them in their correct positions of use.

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# CLAIMS

1. A pair of boards interconnected by a plurality of flexible ties for extending over the base of a bed, beneath a mattress, to suspend the boards on opposite sides of the bed with lower portions to the boards abutting opposite faces of the base so that the boards are substantially vertical, with upper portions thereof projecting above the base.

2. A pair of boards as claimed in Claim 1, in which the ties are releasably attached to the boards.

3. A pair of boards as claimed in Claim 2, in which the ties pass through respective apertures in the boards and are knotted, or engaged with anchorages of a larger size than the apertures, at respective free ends to attach the ties to the boards.

4. A pair of boards as claimed in Claim 1, Claim 2 or Claim 3, in which the ties are adjustable in length.

5. A pair of boards as claimed in Claim 4, in which each tie comprises two portions releasably engageable with each other, one portion being attached to each board.

6. A pair of boards as claimed in any preceding claim, in which the ties are of webbing material.

7. A pair of boards as claimed in any preceding claim, in which each board has a smooth surface coating.

8. A pair of boards as claimed in any of claims 1 to 6, in which each board has a textile cover.

9. A pair of boards as claimed in any preceding claim, in which at least the upper edge portions of each board is padded.

10. A pair of boards as claimed in Claim 9, in which the padding, at least along the upper edge portion of each board, is of resilient material.

11. A pair of boards as claimed in any preceding claim, in which opposing faces of the boards which abut the mattress, in use, are adapted to grip blankets inserted between the boards and the mattress.

12. A pair of boards as claimed in Claim 11, in which each of the said opposing faces of the boards is provided with a rubber or resilient plastics pad having a ridged surface.

13. A pair of boards as claimed in any preceding claim, in which opposing faces of the boards which abut the base are padded with a resilient material.

14. A pair of boards as claimed in any preceding claim, in which the boards project from 10 cm to 20 cm above the bed base, in use.

15. A pair of boards as claimed in any of

Claims 1 to 13, in which the boards are adapted to be located adjacent the head of the bed and project to a height of from substantially 60 cm to 1 metre above the base, additional ties being provided for interconnecting the upper portions of the substantially vertical edges of the boards adjacent the bedhead.

16. A pair of boards as claimed in Claim 1 and substantially as herein described with reference to, and as shown in, the accompanying drawings.

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